TOWARDS THE END OF THE BEGINNING: DEVELOPMENT, IMPLICATIONS AND PROSPECTS OF KENYA'S MEDICAL SCHOOL

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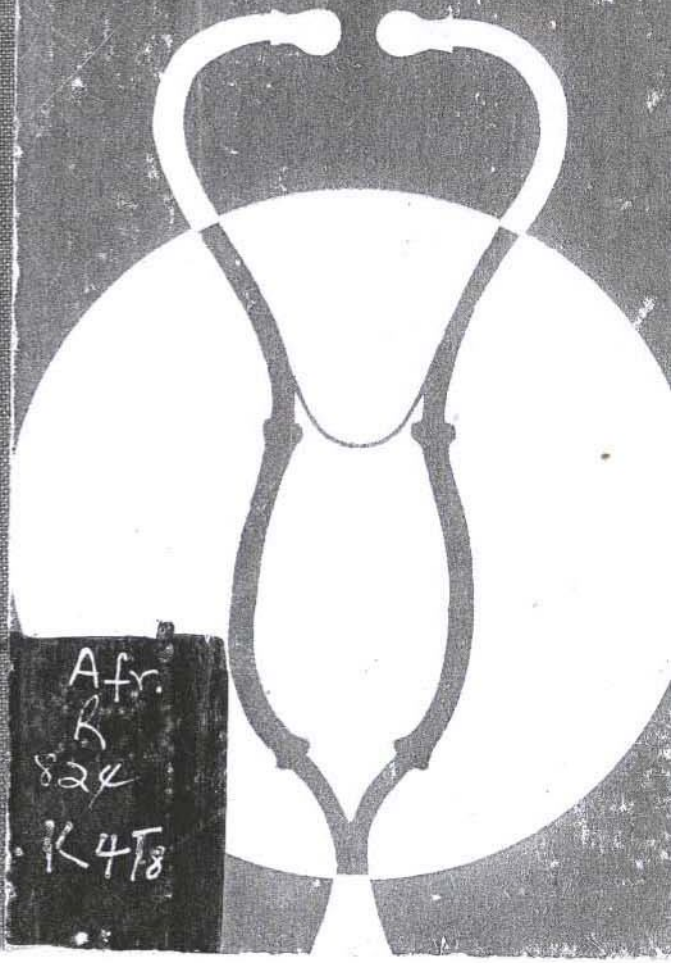

THE INAUGURAL LECTURE SERIES was started in the days of the University of East Africa when it was the practice of the then University College, Nairobi to have its newly appointed Professors deliver their first public lecture in Nairobi. This new series under the University of Nairobi has been supported by funds from the University Deans' Committee and copies of the lecture are on sale at bookstores.

In this lecture the Professor of Medicine looks back over the four and a half years since the beginning of the Faculty of Medicine and before that to the origins of the Medical School. In reviewing historical events he draws some lessons for the present and the future. He attempts to open a window on the special needs and problems of this new medical school and poses some of the challenges that must be faced by Kenya herself if this venture in Nairobi is to prosper.

W.F.M. Fulton

Professor Fulton came to Nairobi as acting Head of the Department of Medicine at the beginning of the Faculty of Medicine in 1967. The following year he was appointed to the foundation Chair of Medicine. A graduate of the University of Glasgow, Scotland, he has held appointments in that University since 1950, and has worked also in the University of Edinburgh and in the Johns Hopkins Hospital, Baltimore. In 1958 he became Senior Lecturer in the Department of Materia Medica (Pharmacology and Therapeutics) in the University and Consultant Physician, Stobhill General Hospital, Glasgow. His experience as a teacher of Pharmacology enabled him to provide the course in this subject in Nairobi for three years until the recent appointment of a pharmacologist. His main interest in clinical medicine is Cardiology. His research contribution has been in the field of coronary artery disease, on which his M.D. thesis was awarded Honours by the University of Glasgow, and he is the author of a book on this subject.

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TOWARDS THE END OF A BEGINNING

Development, Implications and Prospects of Kenya's Medical School

A new Faculty of Medicine was born in Africa in July, 1967. The birth itself was uncomplicated — misleadingly uncomplicated. Not so the events before and after. The gestation period saw discord between putative fathers and jealous relatives, and called for expert antenatal care. Experienced professional guardians were engaged to nurture the infant and to all outward appearances it has thrived. However, it remains to be seen whether devoted professional care has offset inadequate parental concern in its upbringing, and can overcome the frustrations, deprivations and conflicts forced upon the infant.

My purpose will be served if I should raise in your minds some questions about the medical school in Nairobi, questions that concern its origins, implications, objectives and prospects. I do not propose to give answers, but to let us look together this evening upon some of the factors which bear upon them.

I have chosen the topic of the Medical School as the subject of this inaugural lecture because of its importance; and because I have been impressed by the extent to which ignorance prevails about this facet of Kenya's cultural and economic development — an ignorance that is not confined to the general, or lay, public, but is found also within the medical profession, in the teaching hospital and even in the corridors of the University. Do not suppose, however, that Nairobi is unique in this. I imagine that in Universities throughout the world a similar lack of understanding is the rule. In the company of the technological faculties of Science and Engineering, and in the staid scholarship of Arts, the Faculty of Medicine may be likened to a highly-placed courtesan — held in a love-hate relationship, the object of desire, envy and of mistrust, a little remote yet biologically involved in the affairs of men, exceedingly expensive to keep, and above all dangerous should she fall into incompetent or scheming hands.

Doctors for Africa

Before we focus down upon Nairobi let us take a look at the broader canvas of Africa, with res-

pect to medical schools and medical man-power. I shall refer only to those schools which are training University medical graduates.

If we look at the map of Africa in 1960, only five medical schools are to be found south of the Sahara and north of the Limpopo. Eminent are the schools of Ibadan in Nigeria and Makerere in Uganda. The other three are in francophone Africa.

If we now look at the picture as it is today, just over 10 years later — no less than fifteen new medical schools have been founded. It can be seen that Kenya's own medical school is in goodly company. Are these schools necessary, desirable, economically supportable? Are the doctors emerging from these schools likely to be as well trained as from established Universities overseas; or could their training even be more appropriate to the medical requirements of their own countries?

Let us consider some of the facts and possibilities.

Firstly, the need for more doctors in this great area of Africa. It was agreed at the 16th World Health Assembly in 1963 that one doctor for each 10,000 people was the lowest acceptable ratio. To attain this figure the developing countries in Africa would require, in theory, 13,000 more doctors immediately; and 1,200 graduates per year over the next 20 years, or 37,000 by 1983. (That is nearly 20 times as many doctors as our own school in Nairobi can produce at full output in twenty years.) The task is daunting, but not paralysing.

How does this ratio of doctors to population compare in other places? I show a few examples on this table.

Table 1

Ratio of doctors to population

U.S.A.	1:625
U.K.	1:830
India	1:6000
Nigeria	1:40,000
Kenya	1:11,000

This would suggest that Kenya is already ahead, nearing the target of 1:10,000. But this is misleading. I shall return to this in more detail. Suffice for the moment to recognise that in Kenya the ratio of doctors to people in the great urban areas is high, 1:1,500, but in the rural areas there is

only one doctor to about 37,000 people. These figures are a few years old but so far as I can discover the situation is similar today.

How does one medical school in Kenya with 11,000,000 people compare to elsewhere? This is clearly in step with her neighbouring countries of East Africa and with some other African countries. Let us compare to another, Britain.

Table 2

	No. of medical schools.	Annual output	Population
KENYA	1	100 (future)	11,000,000 (+ 3.3% p.a.)
BRITAIN	27 (+3)	2,500	55,000,000

From Britain, many leave to work in other parts of the world, including Africa, but the majority of the output of doctors serves to *maintain* the professional complement, making good losses from retirement and emigration. Kenya has to *build this up.*

Can Kenya not simply send students overseas to train? This is what happened hitherto. I cannot give world figures, but to compare one African country's needs to the potential of the British Medical schools alone will give some idea of the problem. British Universities have admitted to their medical schools rather less than 10 per cent of their annual intake from overseas, largely Commonwealth, countries. Ten per cent of 2,500 is 250 per annum, for all countries. Kenya alone could use them all! These students are charged the usual tuition fees which by no means cover the costs of training. At an approximate estimate — a difficult figure to reach with exactness — it costs about £10,000 to train one student in medicine in the United Kingdom. The figure is not likely to be very different in Kenya. The training of African students at British Universities therefore represents a form of technical aid, lost in the overall costs for the small numbers involved. Increase that figure to provide a realistic supply of doctors and the economic considerations would emphasise an advantage of training in the country of origin.

The considered opinion is that it is now better to train the majority of undergraduates in their

own countries and to this end donor countries are prepared to give financial and technical aid. In general, the long absence from the home country is undesirable. There are also positive advantages to training in the country of origin — and of future service — which outweigh the obvious advantages of attending an established and advanced medical school overseas. These advantages include the training itself which may be specially adapted for instance, in Kenya, for Kenyan conditions. Moreover, the standard to which African graduates have been trained in some overseas countries has been so insufficient that this has caused serious difficulty in their placement on return. Kenya is not alone in this problem.

Origin of Kenya's Medical School

Against the background of shortage of doctors in Kenya, more cogently the shortage of Kenyan or African doctors, the question of starting a new medical school was considered at government level. Let us look briefly at the history of its evolution.

A working party under Sir Arthur Porritt examined the University situation in developing Commonwealth countries for the British Government. Acting in accordance with the Porritt report of 1962 on Medical Aid to Developing Countries, the Department of Technical Cooperation (later O.D.M.) invited British Universities to explore the possibility of establishing further links with overseas Universities. The eyes of the University of Glasgow, Scotland, turned naturally to Kenya in this context, because links had already been established between the Veterinary schools of the University of Glasgow and the University of East Africa, whose Veterinary Faculty had recently moved to Nairobi.

The following year, 1963, Cameron and Storrar from Montreal visited Nairobi and reported on the development of postgraduate medical education in Kenya.

1964 was a year of active exploration of possibilities for further undergraduate medical training in East Africa. It may be noted that the Medical School in Makerere University College was already established, having evolved through successive stages from its foundation in 1924. By 1951 Makerere had been granting a licentiate in Medicine and was to grant the M.B., Ch.B. degree

of the University of East Africa in this year in question, 1964.

In February 1964 the constituent colleges of the University of East Africa received a visit from four Professors from the University of Glasgow, headed by Charles Fleming, the Dean of the Faculty of Medicine. When they reported to their Faculty it was agreed in principle to offer a measure of support to Dar es Salaam and a more extensive offer of support to Nairobi. The response from the Kenyan Government was likewise prompt, with a visit to Glasgow by Njoroge Mungai, at that time Minister of Health, and James Gekonyo, at that time Senior Medical Officer (training).

In July 1964, a WHO consultative group (Tunbridge, Jessop and Grzegorzewoski) studied the situation on behalf of the Kenya Government and made a number of sound recommendations, some of which have been followed.

1. A Medical School should be established at Nairobi.
2. Nairobi should start with an intake of about 30 students and build up to at least 100 per annum.
3. As a preliminary, final year medical students from Makerere should spend part of their time in Nairobi and should receive teaching in the Kenyatta National Hospital provided that the University of Glasgow could second staff for this purpose.

I was present in the large and enthusiastic audience in the University of Glasgow that heard the propositions put before it and I recall the spontaneous support that was evident. There followed a period of active recruitment — and a period of tedious negotiation of terms of service.

This was September 1964. Six months later the first team from the University of Glasgow arrived in Nairobi and shortly thereafter undergraduate instruction commenced.

To go back to December, 1964, Cameron and Ross from McGill University, and Storrar, Montreal General Hospital, visited Kenya on behalf of the Canadian Government and reported favourably on supporting the Undergraduate medical school in Nairobi. Their recommendations were to bear fruit when the first Canadian contingent arrived in 1968.

Of other Universities that showed interest in Nairobi, practical help has come only from Padua.

The Italian contingent arrived in 1968, to support biochemistry and anatomy.

It is fitting to pause for a moment and to consider what had gone before. Nairobi with its large population, its University College and large hospital was the natural site for a Medical School in Kenya. The Kenyatta National Hospital, as we know it today was built before the First World War and became George VI Hospital in 1951. Its staff included some energetic and talented clinicians and it was associated with active researchers in the field, based mainly on the neighbouring Medical Research Laboratories. It is not surprising therefore that this community of clinicians and scientists (based on the Hospital) should develop a considerable measure of postgraduate activity. By 1957, these activities included an organised training programme for junior hospital staff towards higher qualifications; and it is to their credit that a fair number were successful.

1965-67. Glasgow-Nairobi link.

Into this setting came the first group from an overseas University, to institute undergraduate training. The help given to the newcomers by clinical colleagues with long local experience was invaluable; as was the initial cooperation from administration. All seemed set for a period of harmonious symbiotic development. That it did not quite work out that way should not really surprise students of human nature or of hospital administration. I shall return to some of the difficulties later. Sufficient for the moment to note that a fairly large group of strangers from an overseas University was seconded to University College Makerere, implanted in Nairobi to teach undergraduates of Makerere in a hospital, whose administration was neither under their control nor under the University. In the beginning the University teachers were guests in others' wards, responsible for teaching and care of patients — but without authority. The existing clinical staff found themselves rather suddenly hosts and the defenders of their own territories. That it worked at all is a tribute to the resilience and the persistence of human nature. The first disease with which the Medical School was threatened therefore had some features in common with organ transplant and host rejection.

I do not want to dwell on the period between

March 1965 when the first group from Glasgow University, under the leadership as clinical Sub-Dean of Dr. J. S. Kennedy, began the operation Medical School Extension of University College Makerere in Nairobi and the inauguration of the Medical Faculty of University College Nairobi in July 1967. It has been detailed in a paper by Kennedy (1968). In this period of less than 2½ years there was active development of undergraduate teaching and of upgrading of ancillary services. The parts played by all concerned had their influence, not least the physical presence of the students of Makerere. It may be noted with satisfaction that the final examination performance of the final year students who opted to come to Nairobi (about half the total class) compared favourably with those who remained in Uganda throughout.

An important feature of this period was the planning of the future. Successive visits were paid by representatives from overseas Universities and governments. Further reports were made by WHO consultants. The planning of the new Kenyatta National Teaching Hospital was of the highest importance. 1966/67 saw the arrival of a consultant architect, a coordinator for Medical Faculty development and an experienced hospital planner.

The second disease developed by the Medical School was Committee addiction. The period 1965 to 1967 saw a rich crop of Committes. Under the University College Nairobi the Medical School Planning Committee met 62 times, to say nothing of its sub-committees. A Hospital Management Committee was formed embracing, among other things, the responsibility for developing teaching facilities. A Medical Advisory sub-Committee was set up, met monthly and in turn spawned a healthy brood of sub-committees. The cumulative number of man hours spent in this fashion must have been prodigious.

1967 *Faculty of Medicine, University College, Nairobi.*

And now the Medical Faculty of Nairobi. This was inaugurated at the beginning of July 1967 when the first intake of 26 students of Nairobi University College commenced the first preclinical year. Their studies were conducted in the Veterinary Faculty buildings on the Chiromo campus. It is fitting to pay tribute to the cooperation given

to the Medical School by the Vets, who not only made the Medicals welcome guests in their departments but contributed to their teaching. Indeed for a time classes were shared. One need for this was a shortage of preclinical teachers in the Medical Faculty and the other that the new Medical Faculty buildings at Chiromo were not quite ready. These were officially opened by the Visitor to the University College, H.E. Mzee Jomo Kenyatta, on March 7th, 1968.

Meanwhile at the clinical school based at Kenyatta National Hospital the clinical departments continued the teaching of final year Medical Students from Makerere for a further year and laid plans for the arrival in course of time of Nairobi's Medical students.

The transition from Makerere Medical School Extension to Faculty of Medicine Nairobi was smooth. The Coordinator, Professor Gordon King, former Dean in Perth, Australia, became Acting Dean; and acting Heads of Departments and their academic staff were incorporated in the new Faculty. Committee work followed the customary crescendo progress of this disease and to date shows little sign of remission. By this time most of the original planning of new buildings for the new Kenyatta National Teaching Hospital had been made. Phase I is now nearing completion, comprising —

1. a new outpatient department with new premises for Radiology, Records, and Intensive-care ward;
2. Clinical Sciences Block with teaching facilities, research and diagnostic laboratories, and office accommodation.
3. Students' residences.

The new wards will follow in Phase II and Phase III.

Soon there will be not less than 300 medical students in the teaching hospital at any one time. On humanitarian grounds the ratio of students to patients should not be too high; and the patient numbers must be sufficient to provide a wide coverage of medical conditions. When the ward block is completed, the total of about 1,800 beds in the Kenyatta National Teaching Hospital complex should meet the anticipated teaching and service requirements, provided student numbers do not increase.

Throughout the development there has been a race between the building of their living and

teaching accommodation and the arrival at that stage of the waves of medical students. In this race the students have usually arrived ahead of facilities and improvisation has been necessary time and time again. Despite this the academic ship has steered a steady course, and in respect of accommodation is in the process of moving to smoother waters. Thus the teaching of Pathology has in the nick of time commenced in new premises, but the clinical departments are still waiting. They continue to be housed in offices on the ground floor of the Ismail Rahimtulla Waljee Trust Wing (The Asian Wing) with up to four to an office and sometimes standing room only in the lecture room adapted from a former 8-bedded ward.

Teaching of medical students in Nairobi

The teaching of medical students in Nairobi falls into two main periods — Preclinical and Clinical.

Study of the preclinical sciences occupies the first two years and takes place on the Chiromo campus. This has the advantage of concentrating biological sciences including Veterinary science but has the disadvantage that preclinical students and teachers are territorially out of touch with their colleagues in the clinical school.

Preclinical subjects include Anatomy, Biochemistry, Physiology, with an introduction to Pharmacology, Behavioural Sciences, Statistics, and Community Health. At the present time not all entrants to the medical course have had a uniformly satisfactory grounding in the natural sciences at secondary school and a good deal of ground has to be covered again.

In the preclinical sciences, a relatively small staff is able to instruct fairly large classes. On grounds of relevance and perspective it is most desirable that the teaching of preclinical sciences to medical students should be at least controlled if not mainly conducted by teachers with clinical background and training.

The teaching in the first two years has much in common with other science subjects and is therefore readily comprehended by all. Moreover it is solely under the organisational control of the University, and the situation, despite a disparately small staff, is fairly well in hand. For these reasons I am going to say no more about the preclinical sciences and pass on to the clinical school, which

is manifestly incomprehensible to most non-medical people.

We return therefore to the Kenyatta National Hospital.

Clinical studies occupy the next three years.

Table 3

YEAR			
3	MEDICINE	SURGERY	Pathology Pharmacology
4	PAEDIATRICS	OBSTETRICS & GYNAECOLOGY	COMMUNITY HEALTH
5	SPECIAL* SUBJECTS	MEDICINE	SURGERY

*Anaesthetics, Dentistry, Diagnostic Radiology and Psychiatry.

Third year mainly comprises Clinical Medicine and Clinical Surgery with continued study of Pathology and Pharmacology. Fourth year — Paediatrics, Obstetrics & Gynaecology, Community Health. Fifth year — Clinical surgery and Medicine and special subjects.

There is a considerable measure of integration of the various subjects and interwoven with those I have mentioned are also Dermatovenereology, diseases of the Eye, and of the Ear, Nose and Throat, Forensic Medicine and Medical Ethics.

No curriculum is ever perfect. The curriculum in Nairobi is the product of planning and adjustment with the local needs and facilities in mind. The objective is primarily to train general duty medical officers to man the future medical services of Kenya. To this end the training should be relevant to the diseases prevalent in Kenya and to the conditions of service that are likely to be encountered. At the same time it should not be supposed that we are training a cadre of super medical assistants. The nature of the work that

lies ahead in medicine is too diversified for that. Moreover among our students are future leaders of the profession, future teachers of successive generations of students. Accordingly a relevant training must not be too narrow, too pragmatic, but must include a sound, broad and thorough training in clinical science. I should also like to put to rest the common fallacy that because this is Africa Tropical Medicine is all that matters. For sure it is important but it is also true that there is scarcely an ill to which man is heir that is not also found in Kenya.

Let us now visit the teaching hospital and glimpse how we go about teaching.

(This part of the lecture is illustrated with slides.)

As in all subjects part of the teaching of medical students takes the form of lectures, lecture demonstrations, seminars; in one classroom one teacher can lecture to a class of 20 or 200, the numbers matter little. The value of such instruction, fashionable though it be to do so, should not be under-estimated. But if we left it that way the result would be disastrous. You cannot train doctors that way alone.

Much of the student's time is spent in the hospital wards and clinics, working partly on his own and partly under the guidance of his teachers. Here teaching must be in very small groups with intimate relationship between student, patient and teacher. Accordingly most of the teachers' time is spent in this form of instruction.

In this visit we may see a student taking the story of her illness from a patient. Later he will examine her and also examine relevant specimens, for instance, blood. In this way he will learn to reach a diagnosis on his own. We greatly stress in Nairobi the development from the beginning of a sense of responsibility. It is more difficult to teach responsibility than technical knowledge and skill. It is a matter of giving opportunity, setting standards and above all the witnessing in the staff of professional integrity and devotion to duty.

At a later time the student may present his findings to a small group in the course of a teaching ward round. His findings are customarily checked in an individual session with a teacher.

We may see a teacher conducting a bedside teaching session helping a small group of students to interpret clinical signs of disease.

Again, we may come across a small tutorial, perhaps discretely discussing the diagnosis and management of a patient they have just examined in the ward.

This may take place in a ward side room laboratory.

Much emphasis must be laid on self reliance and the ability to perform simple but helpful laboratory tests. This is more important for our students than for instance in Europe or North America, where there are abundant facilities and opportunity for consultation with colleagues. Upcountry in Kenya the microscope may be, so to speak, the young doctor's only colleague, the only court of arbitration to which he can turn. With its help he may reach an accurate diagnosis of, for example, malaria, tuberculosis, schistosomiasis, meningitis, amœbiasis and some common conditions of the blood. It does not matter too much if our students are unfamiliar with sophisticated techniques not yet available in Kenya. But we — and they — will have failed if our students leave the teaching hospital without a sufficient competence in clinical examination, side-room laboratory and ward procedures.

I have started with clinical medicine. Much that I have said could also refer to surgery, paediatrics, obstetrics. In these subjects we have to consider their own special features.

An operation is in progress. The surgeon, assistant doctor in training, a student assisting, anaesthetist, nursing staff — from the teaching point of view, all these people are involved to allow one student to gain one item of his experience.

A child is born — one student has attended. Perhaps he has waited up on duty most of the night to participate.

The child is older, teacher and student examine him together.

Meantime other studies continue. In the pathology laboratory the class studies with the microscope. The student also works on individual cases. His findings are checked and discussed with a teacher. This teaching exercise begins in the post-mortem room, where he assisted a pathologist in his examination. These are doors, beyond which I do not take you on this visit.

Medicine is not only concerned with the treatment of ill people in hospital. Here in the field students participate in some of the techniques of

Community Health. This subject has great importance in Kenya, has an important place in our curriculum and its teaching is carried out with imagination and practical relevance — relevance to major health problems of East Africa and relevance to the existing structure of the health services in Kenya.

Teaching Hospital

It is important that I say something about the Kenyatta National and about teaching hospitals in general.

From time to time the image of the Kenyatta National Hospital suffers when unfortunate incidents are reported; but the good it does is usually unsung. This great hospital must strive always to do better, there is no room for complacency. But let us put its performance into perspective:— (Table 4).

Table 4

SOME STATISTICS OF THE KENYATTA NATIONAL HOSPITAL
(in rounded figures)

	Annual	*Daily*
WARD ADMISSIONS	18,000	50
OUT PATIENT ATTENDANCES		
Total	570,000	1,580
Filter Clinics & Casualty	305,000	820
Consultant	121,000	330
Diagnostic, Therapy, Dentistry etc.	143,000	440

Summary:

1150 clinic attendances, 50 admitted, all but 3 discharged after treatment.

Every year, 18,000 people, mostly severely, and often desperately, ill are admitted to the wards of the Kenyatta National — that is, fifty a day.

More than half a million attend annually as out patients. Of these, 830 arrive at casualty department or the filter clinics unheralded, undocumented. Many of these will be referred to attend consultant clinics some other day.

Thus, of over 1000 people attending clinics each

day fifty will be admitted and of these all but 3 will go out again after treatment. This is not a bad record considering the severity of illness that attends.

A good teaching hospital must have a sufficiency of staff, facilities and beds for the proper instruction of medical students. A high standard of patient care is a pre-requisite of good undergraduate and postgraduate teaching in Medicine. It follows that the highest locally available standards of patient care in terms of facilities for diagnosis and treatment and of skilled staff will tend to be found in the teaching hospital. At the present time the Kenyatta National Hospital measures up fairly well, in its overall performance, in spite of a rather uneven distribution of talent and motivation, for which the energies and skills of others must compensate. The new hospital which is partly built will provide facilities that would be the envy of most doctors working in the older aid donor countries.

A good teaching hospital may be solely under a single authority, which is the most efficient system, or — like our own teaching hospital — be staffed by persons under two authorities, two employers. In some other countries such an arrangement though not without its inherent problems works fairly well, the best of a bad job being made by both parties in recognition of the tradition of the hospital and the accidents of history that brought it about. It is regrettable that in starting a new medical school in Kenya the worst features of such administrative arrangements should have been adopted, with so little in the way of tradition, experience and skill to offset the disadvantages.

The clinical staff of the hospital is divided into two groups, under two masters; yet the administration is identified with only one. The extraordinary anomaly exists that the University staff carry a major burden of patient care, contribute most of the special skills, are responsible for the teaching functions and hold themselves in readiness to meet emergencies and yet are almost without representation in matters of policy or decision. A unified and impartial administrative arrangement is urgently needed, for Kenya's teaching hospital.

Nevertheless, in spite of the climate of partiality that has prevailed to date, a considerable harambee effort has been established at a personal level between some Government clinicians and academic staff — a tribute to their mutual recognition that the welfare of the medical school and the patients in the hospital transcends the narrow perspectives with which some others are preoccupied. In this there is hope.

When I came here a few years ago there was talk of "teaching" beds and "service" beds, of University teachers and service doctors, as though these were quite different entities. Further, some, for reasons of personal advantage or gratification, were at pains to create, and to perpetuate, the myth that the real work of the hospital was undertaken by those not on the academic staff. All this has been most damaging to the image and the harmony of the Medical School.

I wish therefore to clarify to you that all members of the clinical staff of the teaching hospital have a dual task which is shared — teaching and patient care. For sure a greater load of teaching falls upon the academic staff. But all teachers in the clinical subjects — Medicine, Surgery, Obstetrics, Paediatrics and the finer specialties — must also be practising clinicians, doctors, actively engaged in the care of sick people under their charge. Clinical care of people occupies the greater part of their daily task and time; but it also forms the basis for their teaching. The two things are inseparable. Teaching beds and service beds — this is a figment of the imagination!

In the hospital about half the beds and more than half the outpatients attending consultant clinics are under the direct care of the academic staff. This commitment to clinical responsibility has to be understood by those who engage clinical teachers for the primary purpose of teaching medical students. The Government clinicians are employed primarily for service needs but those with interest and aptitude find themselves involved in the teaching aspects of the teaching hospital, and it is right to put on record that some make noteworthy contribution to teaching. Not only contribution, in some areas the medical Faculty is entirely dependent on Government colleagues for teaching in, for instance, diseases of the Eye, Ear, Nose and Throat, Tuberculosis and Diagnostic Radiology. In the selection of future non-academic staff it follows that due weight should be given to their competence to meet the full needs of the teaching hospital. The University should have a say in their appointment; and this is normal practice elsewhere.

When I speak of the medical school I refer to the buildings, the facilities and all those who work therein towards the combined purposes of clinical care, teaching and research. Sometimes the term is used more narrowly to refer mainly to the Faculty of Medicine. Some of us would like to see it extended to include all who contribute to training and research, throughout Kenya.

Postgraduate Medical training

Now a few words on postgraduate education, a few words only for this is too big a subject to deal with in this lecture, especially as it is a vexed question in Kenya.

A career in medicine is a continuous learning process. All good medical schools nowadays recognise that mere exposure to experience should be supplemented by a training programme. Firstly, there is the early training of the first year or so after graduation, the pre-registration internship period. The content of the undergraduate course and the experience anticipated in the internship period are inter-related. These matters are very much the concern of the Faculty of Medicine. Yet so far in Kenya the Faculty of Medicine has had no control over the posting of interns, or their sufficiency at the time they are taken on.

Next, there is the training of potential specialists in a teaching hospital. Usually this takes the form of in-service training. That is to say, the young doctor is a member of the clinical staff of the hospital, making appropriate contribution to patient care. This in itself is a learning experience, especially where he has the guidance of experienced clinicians. In addition a deliberate attempt is made to widen that experience by a system of rotation and to supplement experience with tutorials, lectures, demonstrations, seminars. In order that there be time and energy to study and to participate in postgraduate activities it is necessary to have a moderately greater complement of trainee doctors than purely for service purposes. In Kenya these doctors are designated Senior House Officers (SHO) or Registrars. For most the objective is the acquisition of a higher qualification in Medicine, Surgery and so on, hitherto requiring examination overseas. For some time the University higher qualification of Mastership in Medicine has been available in East Africa. It should be noted that neither the Mastership of

Medicine nor its equivalent of M.R.C.P., F.R.C.S., M.R.C.O.G. are specialist qualifications. In Britain the holder of one of these qualifications is eligible to apply for a specialist training post in a teaching hospital.

Equally important in Kenya to the training of true specialists is the opportunity for further postgraduate training experience in the teaching hospital with the purpose of improving the standard at provincial and district hospital level. The medical school has concern that the staff of these hospitals be appropriate for the supervision of junior hospital doctors posted to them for this purpose.

For the past four years members of the Faculty of Medicine, with the cooperation of some members of the Government staff of the teaching hospital, have attempted to provide in the Kenyatta National Hospital a first class programme of in-service training. It is not surprising that they should do so, for most have been accustomed to preparing trainee doctors for higher qualifications in their own countries and a fair number have been examiners for the same higher qualifications.

In all these circumstances it may surprise you to know that the Faculty of Medicine in Nairobi has virtually no control ex officio over the posting, career prospects, qualification objectives and duration of in-service appointment of the postgraduate students in clinical subjects in the teaching hospital of Kenya. Of course the members of the Faculty have tried hard to modify this arrangement and have energetically continued training of young doctors, but it remains another example of responsibility without authority and the result is far less than might have been.

It is surely anomalous that experienced teachers should come here at no small expense to Kenya and to the countries of their origin while the postgraduate trainees who might benefit from them are sent to other teachers in the same countries overseas to undergo a primary postgraduate training less relevant to the practice of Medicine in Kenya than provided here.

But there are other points in the postgraduate training programme which concern us in the context of undergraduate teaching in the building of a Medical School. Firstly, the young doctors in a teaching hospital have a special role in undergraduate education and for this reason the selection of these young doctors on merit is

vitally important. Their role is not so much in formal clinical teaching, although some are encouraged to participate in this fashion. (Indeed teaching itself is a powerful stimulus to learning.) But more importantly their standard of professional performance and conduct has a potent influence on the undergraduate — for better or for worse. Even in his internship period a good intern is a leader and an inspiration to the students and a poor one the converse. A good registrar in turn gives leadership to his juniors. As he gains competence he has a vital role to play in the teaching hospital. His influence while he is absent on studies abroad is zero.

Secondly, a sufficient in-service training here would encourage the promising young doctor to identify himself with the Medical School effort. It is also vital that the small flame of interest in academic work that burns in some young doctors be fanned in the atmosphere of a purposeful teaching hospital programme, and not be extinguished in the climate of vacillation that has prevailed until now. Once lost it is hard to rekindle. Other interests and opportunities seem to have greater claim at this stage in Kenya. Indeed before he leaves the teaching hospital for overseas training, if that be in the plan, the decision may already have been mutually reached for him to join the academic staff. His overseas experience could be pre-arranged to equip him with relevant specific skills with which he would return to the teaching hospital. By contrast under present circumstances on his return he is normally posted elsewhere, to some area where he fills a service post that is undoubtedly much needed — but where much that he has learned abroad is not applicable and falls into disrepair. I shall say something later of the stresses on the Medical Services and their difficulty in sparing any of their personnel for the University. But I must not hide from you the issue that is at stake — unless some such men are built into the foundations of the Medical School in Kenya, that school will be built on sand.

This leads me to another thorny problem — the staffing of the clinical departments of the University.

Staffing: Development and problems.

I have already made the point that teaching in small groups implies a larger proportion of teachers to students, than in some other Faculties. A satisfactory basis for working out an optimum staff-student ratio is the dream of the administrator and the nightmare of his colleagues. Let me say that the staff of the teaching hospital should be sufficient to meet the service load, the teaching load and the requirements of research. The last is not a luxury, for a medical school that does not have ongoing research is likely to stagnate and to become second-hand. There is no formula to apply.

We could however compare to some other schools.

Table 5

STAFF-STUDENT RATIOS
Clinical Years Only

		Student	*Staff*	*Ratio*
Nairobi	1971	42*	103	1:2.4
	1973	?	220	? (1:5)
Glasgow		c. 500‡	600	1:1+
McGill		c. 900‡	330	3:1

*Medicine, Surgery, Obstetrics, Paediatrics, Pathology only, academic staff only.
‡Full-time and Honorary Academic staff. Not junior hospital staff.

In Nairobi's figures I have not included Government staff. Their teaching contribution, registrars included, is probably about 10 per cent of the academic teachers. By contrast the Glasgow and McGill figures include the equivalent of senior Government clinicians who hold honorary teaching appointments in the Universities: but do not include the registrars, senior registrars of Glasgow or the residents of the teaching hospitals in Montreal.

The extent to which a University requires to staff a mixed teaching hospital such as the Kenyatta National, naturally is related to the numerical and professional sufficiency of the non-academic staff. It is clearly desirable that the Faculty of Medicine be represented in the selection of all clinical staff. In Nairobi this occurs to a limited extent in SHO/Registrar appointments; but not at all in appointments of senior staff or of interns, which in a teaching hospital is an astonishing arrangement.

I would like now to trace briefly the staff development in the academic departments of the teaching hospital (illustrating with multi-coloured diagrams). Starting with the Department of Medicine.

Seven years ago the medical wards were under the charge of two Government physicians, one Kenyan, one British, each with one part-time physician. This with a variable number of junior staff was the situation for the care of 200 beds. Into these wards was introduced a small team from Glasgow. Three was still the academic complement in medicine at the beginning of the Faculty of Medicine, Nairobi. The following year three from McGill University, Canada arrived. Subsequent increments of staff led to the present position with eleven in general medicine, one in Dermatovenereology and one in Pharmacology. The academic staff derives from Glasgow, McGill, Kenya (citizen), Holland, India, Nigeria, England. Two full-time Government Consultants, one part-time and 8 Registrars, two to each ward unit of 50 beds.

Upto this point in time the Department has enjoyed academic staff of good standard and just sufficient number. There has however been little stability. The diagram was shown to emphasize two points:

1. The short term nature of the expatriate appointments, 29 staff changes to date. None of the non-Kenyan appointments extend beyond 1973.
2. The very small number of Kenyans so far recruited (2).

We shall look more quickly at the picture presented by the other clinical departments.

Surgery

Much the same. An initial and sustained supply of surgeons and anaesthetists from Glasgow, other expatriates more recently and only two Kenyans on the academic staff.

Paediatrics

This was an entirely Canadian venture until one Kenyan was appointed last session.

I should perhaps note that Canadian personnel in Medicine and Paediatrics are fully funded (apart from housing) by Canadian International Development Agency. Glasgow personnel have upto now enjoyed special secondment arrangements, and they and other British personnel receive salary supplementation.

Obstetrics

Again mainly from Glasgow plus two others recruited from England, until one Kenyan joined the staff a year ago.

In all the clinical departments it is noteworthy — and not accidental — that very few recruits have come from the Government staff; and the total of Kenyans is only six.

Pathology

In Pathology there is a difference. Here there is only a small numerical contribution from overseas. The majority of members of staff have been recruited from the ranks of junior Government Pathologists. Three expatriates, six Kenyan citizens, and two Kenyan non-citizens. This is not unrelated to the policy that eventually the entire pathological service to the teaching hospital would be (and now is) under the University.

In a further diagram I show you the overall academic picture, Medicine, Surgery, Paediatrics, Obstetrics and Pathology. Each entry represents one man-year. There is not nearly enough Kenyan participation.

To make the point even more forcibly, I have removed Pathology leaving only clinical departments. I shall now show you the figures that carry the same information.

Table 6

ACADEMIC STAFF: CLINICAL YEARS 3-5
1965-71
Expressed in man-years

	Clinical	*Pathology*	*Total*
Glasgow University	73(35)*	15(6)*	78(41)*
McGill University	35	—	35
Expatriate, all other	25	2	27
Kenya (citizens)	12	16	28
Kenya (non-citizen)	— (+)	6	6
	145	39	184

( )* Before July, 1967

Owing to the many short appointments in the clinical departments, 88 expatriates have participated for 133 man years; whereas 6 citizens have participated for 12 man years.

Throughout I have omitted the department of Psychiatry with one expatriate Professor and one citizen Lecturer, who joined the academic staff a few months ago. And I have omitted the Departments of Community Health, which undertakes teaching in the clinical years but is not part of the teaching hospital. The situation there is comparable but too complex to express easily, owing to the many non-university personnel, notably those based on the Dutch Institute, who make invaluable contribution. The Kenyan participation however is not dissimilar to the other departments.

Now let us see what message emerges from these figures. The dimension of the technical assistance to Kenya's Medical School from elsewhere is obvious. That is not the point I wish to make. The point is this, it has been a good start, but soon must come the end of the beginning. By now at least half the junior posts should have been filled by Kenyans, but Kenya's participation in her own clinical school is only just beginning.

You may well ask why so few, does it matter, why the hurry, what is there to be done?

Firstly, let me dispel any notion that the presence of expatriates keeps any Kenyan out. The academic Heads of Departments have come here to found a Kenyan Medical School and have exerted themselves to recruit Kenyan staff. And if that were not safeguard enough the University administration has even imperilled departmental staffing while trying to fill vacancies by non-existent Kenyans. Non-existent? Not quite, but very few; and fewer still have been released for this purpose from Government service. There is mitigation for this which I shall come to in a moment.

Secondly, does it matter? Yes, it does — the tissues of Kenya must grow into this graft or it will wither away. For several years a tremendous opportunity has existed in Kenya for her young doctors to develop academic skills in the company of a host of University clinical teachers, but has not been grasped. The opportunity has been frittered away. It cannot be expected to hand out indefinitely.

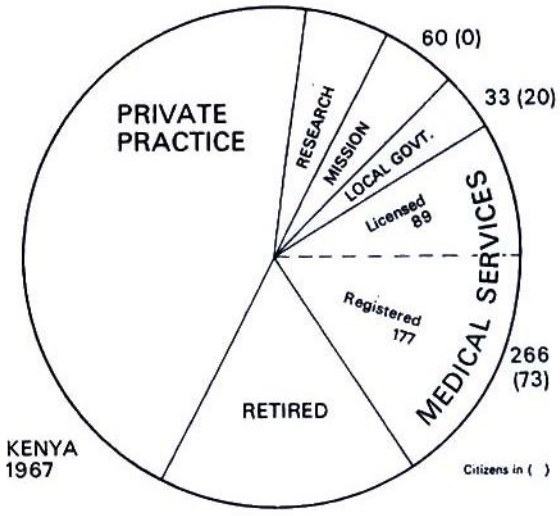
Thirdly, why the hurry. Are we not trying to go too fast? Of course, we are, but this is Kenya's choice, not the teachers. Whether we the Faculty

of Medicine like it or not we are committed — committed to a policy of producing about 100 doctors per year. More urgently we are committed in the clinical years to teach those already admitted this year to the Medical Faculty. In the clinical years today 42 (plus two in Psychiatry and four in Community Health) members of academic staff teach 103 students. In two years these numbers will be doubled; and only a few years thereafter they will be almost trebled. Freezing of the staff situation is therefore no solution. Nor is there a realistic prospect of increased Government staff. Without staff increase the standard of undergraduate instruction must fall.

Some implications, problems and prospects

We shall now consider some of the problems facing the medical services of Kenya which affect the release of doctors for the University. The truth of the matter is that the medical school is not in a buyer's market.

There are just not enough doctors to go round and the medical services are under continuous pressure to use all the man-power they can get. The diagram (fig 1) represents the distribution of doctors in Kenya, based on data a few years old, (Wheeler, 1969) but it is believed that the situation is not very different today.



Of approximately 1000 doctors, the great majority are in private practice or retired. This leaves only about one third to deliver medical care to wananchi, including city councils, missions, etc. Only one quarter are in the medical services. In 1967 this figure was 266, including those licensed in their internship training period. In the medical services only 73 were citizens.

Every year the medical services are joined by new doctors, Kenyans trained in Makerere and overseas, and expatriates. So far it would seem that this does little more than make up for losses. In other words, the medical services' slice of the cake is the same, but there are now more people to be fed.

The outlook should be brighter when our own annual output of graduates reaches the 100 mark: 20 years, 2000 doctors. It remains to be seen how many will deliver care in remote places and how many merely replace departing expatriates in private practice. But even at the most optimistic forecast a 100 years will not overtake the problem.

It is of course the women that are to blame! The most significant vital statistics of Kenyan women is that each may, with just a little encouragement from the men, add another unit to the population each year or so, for twenty or more years. Production of medical man power by this alma mater fights a losing battle against the productivity of the gallant women of Kenya.

It has been calculated that by 1995 production and losses will result in there being 1900 doctors in Kenya. With predicted population increase this will mean overall one doctor to 11,000 people — the same figure as today. However all going well there should be an improvement in the ratio in the public sector — the present figure of 1: 27,000 falling to 1:14,000 (Wheeler, 1969). This is still short of the WHO minimum acceptable figure of 1:10,000.

The recent census figures would suggest that the earlier calculations were on the side of optimism. Improvement can only be very slow unless there should be a remarkable change in the rate of population growth.

The dilemma therefore exists; release of doctors for the medical school will starve the medical services of desperately needed man-power. Not to do so will starve the medical school and in turn prejudice output of doctors trained for the medical services. The potential chief beneficiary will be the tragic loser.

You may be tempted to ask, are not the medical school and the medical services both the concern of Government? It would be a good question.

Somehow, despite the difficulties an answer must be found so that Kenyan recruitment to the medical school may proceed.

Having said that, I must sound a note of realism and warning. At first sight lack of Kenyan staff is readily resolved by waving the magic wand of "Africanisation". It is not as easy as that. Only those with appropriate motivation and competence should be recruited as medical teachers. We owe it to the one hundred students per year for thirty years to think of that; and we owe it to the brave deserving people of Kenya who will be under their care to think of that. And, let it never be forgotten, that is what a medical school is all about.

The teaching of medicine calls for qualities not universally found in all practitioners. Vocation is perhaps too high-sounding a word. But competence founded on sound basic knowledge and experience, long hours of hidden preparation, care for the truth and for truthful communication rather than for acclaim, patience with the less adept, encouragement for the outstanding, concern to engender comprehension and enquiry in others, dedication and scientific integrity — these are some of the things which give medical teaching its validity, and the teacher his status and reward. Unfortunately they also make the disciplines of academic medicine exacting rather than lucrative. Those who possess these qualities and who are also prepared to forgo more financially rewarding professional paths are not too abundant anywhere. but it is important to recognize the realities in Kenya. At this stage in her history, where such other opportunities abound, even for those with quite modest professional attainment, we must not be too surprised or critical should we find that ideal candidates are meantime hard to discover in Kenya.

Also due weight should be given to another consideration in the appointment of permanent members of staff. For their personal qualities professional attainment and academic distinction are powerful determinants in the recruitment of younger men with their careers at stake. This too must be thought about. Moreover, as every farmer

knows, a bull can affect the quality of the stock for generations.

From what I have said, it is not simply "Kenyanisation" of the medical school that is the valid prescription, but the commitment of such able young Kenyans as may be found to the purposes and disciplines of academic medicine; and the commitment of Kenya to this programme. The same, desired, result will follow. This cannot happen quickly unless someone has a sack of dragon's teeth to sow. Yet it dare not be too long delayed. The opportunity of the present is slipping past. A fine medical school has been founded, it now needs to be secured. This will not happen until the young men of Kenya take up the challenge with the approval and positive backing of their seniors and prepare themselves to continue the building of something of lasting value. I mean challenge. Progress does not just happen, it has to be made to happen, it is not enough to jump aboard and let the present momentum carry them forward, for a time. The challenges of academic medicine are not merely the career opportunisms of joining a University medical school.

I referred earlier to the Medical School as an infant. Physically it is a fine specimen, vigorous, well up to the milestones of predicted development. Without the guardians' care it would not have thrived. If the guardians, the academic staff, have been at fault it is this — that their very devotion and competence in its care may have, by substitution, retarded the instincts of parenthood; or at least have given a false sense of well-being.

As a physician I would prescribe less attention to workshops on the theory of parenthood and more to looking to see what goes on in the nursery, more involvement with the processes of upbringing. In my opinion this infant is well worth the trouble of rearing.

In its record to date we see a first-class medical training has been mounted; and has been sustained in spite of frequent staff changes and in the face of incremental waves of student numbers, such that the organisation has had to be changed every year. In addition, not only have standards of patient care been raised, but an impressive volume of research relevant to health problems of Kenya has been carried out.

It will be a major tragedy if the achievement and the prospects of this precious development in Kenya be allowed to slip backwards for lack of means and lack of sufficient care. Surely this is something too valuable to hazard to inadvertence or the pursuit of the wrong priorities. Yet it could be lost by just these things and once lost it would be hard to recover for a very long time.

I have tried to outline to you the magnitude of the problem and the seriousness of the situation. I have not however countenanced failure. So far we may claim a fair measure of success — not so much as some of us would have liked, but success none the less. But I must not withhold from you the precariousness of that success. Medical teachers have come from far Universities bringing experience, skills, dedication and motivation to help to create in Kenya a Kenyan medical school, with Kenyan teachers teaching Kenyan students to be the sort of doctors Kenya needs. They, we, have fallen short of that objective. Students we have, adequate in quality and in number, receptive to teach, enquiring, and so far willing to work. In them resides the prospect of the future. Buildings we now have and more to come. Facilities we have though lagging behind the desirable. But sufficiency of Kenyan staff there is the shortcoming above all. I would prophesy that there is no prospect of this being a truly Kenyan medical school until Nairobi's own graduates in medicine are themselves identified with their medical school as teachers, in numbers sufficient for there to be competition for appointment and promotion.

The graduation of Nairobi's first final year students in a few months' time will mark the end of the beginning. The next phase will call for the utmost effort, if the standards already set are to be maintained. These standards are not only of technique and scholarship but of ethical integrity, scientific honesty and hard work. Standards do not just survive, they must be cared for. Ultimately in medicine, unlike industry and commerce, there is no valid assessment of standards except by another professional. It will not be long before most of the professional teachers who have laboured to set up this medical school have gone. The baton will be passed to other runners in this complex relay.

I trust that the newcomers from afar — and many will be needed for long years to come — will strive to replace their unfamiliarity with a valid understanding of the task before them, that they may bring to it the steadfastness of sympa-

thetic realism; and avoid alike the impotence of disheartenment and the insincerities of false optimism.

Above all I hope that some seeds of purpose and of standards have already been sown, to grow strong in the young Kenyan doctors and students upon whom the challenge will fall. On them will depend whether this point in the history of Kenya's medical school is the end of the beginning of a success story, or the beginning of a chapter of decline.

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